The Importance of Health Care Interoperability with Ed Cantwell –
Hospitals In Focus Transcript

Chip Kahn: [00:10] Hello and welcome to Hospitals in Focus. I'm Chip Kahn and today we are in Nashville at the Center for Medical Interoperability. Just saying our location really gives away our topic for this episode, which is interoperability. This is an important subject, and it is vital to patient care and vital to the future of healthcare delivery in this country. We'll learn more about it as we proceed through the podcast.

We have the perfect person to explain it all, Ed Cantwell, the center's president and CEO. Welcome, Ed.

Ed Cantwell: [00:46] Thank you, Chip, for the opportunity.

Chip Kahn: [00:48] So glad to be here today with you. And let's start, before we talk about you and the Center, let's lay some tracks here for the discussion. And would you define for us the interoperability for electronic health information to set our context?

Ed Cantwell: [01:06]Well the best way to think about interoperability is to start with yourself, right? And in every other aspect of your life, the industry at which you engage has ensured that data flows where and when needed, which creates what I call the currency of innovation. But most importantly they put a level of trust in governance over that data so that it adds value to your life instead of threatens your life.

And ironically in the consumer part of your life, you're witnessing some of the implications of the term data liquidity, where data could actually go anywhere and everywhere. And if not done with a level of trust, could be problematic. So as it relates to your health and wellness, the data about you is the most sensitive data we have as individuals. So I define interoperability in terms of the unique relationship that you as a person, with your caregiver, in the care setting, supported by a health system.

Chip Kahn: [02:21] Thanks, Ed. That gives us a good start. Obviously we're going to talk more about that flow of information, from what I get from you, for better or worse, I think. But before we get into it, let's talk about you for a moment. Can you give us a sense of what in your career led you to the Center, to this activity? And then when we complete that, let's talk a little bit about the Center and I'll ask another question about the Center's role.

Ed Cantwell: [02:50] Well, let me start by saying I don't come from the healthcare industry. I am a Duke graduate, go Duke, an engineering graduate. But I went to Duke for the singular purpose of going into the Air Force to fly fighters, which I did. Flew the F-15 for 11 years. And so many people ask how in the heck an ex-fighter

pilot come to be the CEO of the Center. It was probably the most valuable training I'd ever gotten in my life, right, because it's strategy to tactics; it's all about leadership.

But when I got out of the Air Force, I got into the technology realm, mainly about wireless and the use of wireless to improve healthcare. And that led me to create a company and the next thing you knew I had a hundred hospitals as customers, which the board of directors I had at the time were scared to death of but I loved it. And I became very passionate about the use of technology to help our US healthcare market.

That led me to a non-profit called the West Health Institute, funded by Gary and Mary West. They were a very wealthy couple and they just had the [inaudible 00:04:11] about tackling the big problems of healthcare. We ended up having an employee's father die of a preventable death at Cedars-Sinai. And it led the Institute to dissect that preventable death. And when we did, we uncovered a very challenging problem, and that is, how do we take the most complex care settings, the most complex devices, the most complex individuals and make sure that that episode of care has full comprehensive interoperability, data liquidity, and trust.

So when we debriefed the problem, we were commissioned to go study other vertical markets. So I got the privilege of studying the finance industry, the cable industry, the telecom industry, the shipping industry. And there was a unique commonality between them all. Observation number one, they had a small group of extraordinary CEOs that came together to make sure their industry was interoperable and where data was an asset. Two, they used the governance of a non-profit. So we're a 501c3 not-for-profit, we are member-led, and our members are hospital and health systems. So we don't accept vendor money, although we engage quite extensively with the vendors.

And one of the unique things about this governance structure, as a centralized lab, we can bring CEOs together with tremendous procurement power and protect them under antitrust through the 1984 cooperative R&D act. So if you think about the challenge an industry has against the vendor ecosystem that would like to keep them as proprietary, if they're not united around common things of interoperability and data liquidity, then the market will splinter. You'll have the haves and the have-nots. And in US healthcare, we very much have that. There are elite hospitals; many are in Nashville. But the majority of the hospitals are not elite hospitals and they struggle.

So we were formed to assemble a board of directors of CEOs from for-profit, non-profit, federal, and public, and then focus on the singular problem of the

lack of comprehensive interoperability, data liquidity, and trust. We chose to start in the episode of care, where the costs are highest and the potential for harm is the greatest. It's the bookend to the current push to make electronic medical records interoperable.

So we are a governance model that by charter calls for the leaders of our health systems to come together, build a platform, we call it the trust platform, where the person is in the center, and the things that engage with the person operate in a fully interoperable way ... We use the term one-to-many, two-way, plug and play, standard-spaced ... so that the hospital system and the caregiver have the benefit of that data.

And they not only have the benefit of the data, but they have the benefit of the potential to take that data and make sure that the semantics and tactics are common, meaning ... I don't know if you realize that in some cases there's like 17 definitions of blood pressure, right, from each device. So make sure we speak a common language so that that data can be orchestrated and then exposed to the most promising analytics and machine learning and deep learning and artificial intelligence.

So bringing that level of automation into the healthcare setting so that the person, the caregiver, and the hospital system benefits, not only from a productivity point of view but from a cost point of view and from a clinical outcomes point of view. So the Center is formed to do exactly that. We're a highly technical organization. We develop the reference architecture for the platform that would afford this capability. And once developed, we make it available to the market and at the Center we would be the test and certification body for complying to it.

So if you think about this hope of the internet of things, if you allow the things to be proprietary, it's not an internet of things. It's an internet of proprietary things, and you will never get the benefit that you've seen in the other industries.

Chip Kahn: [09:27] So let's take the broad strategy that you've described, and let's go to a patient bedside. And illustrate for us what this interoperability you're talking about would look like for patient care. And then you began to allude to it, but literally, what will the Center do to help sort of move and leverage, first move technically and leverage strategically those who are providing the technologies that are playing into that bedside. Let's get to brass tacks.

Ed Cantwell: [10:04] So let's do that by a scenario. You're visiting the wonderful city of Nashville from Washington. Lord knows I don't want this to happen to you, but

if you were in an automobile accident here and you were rushed, I'll just pick a for-profit system, you were rushed to Centennial. As they put you in the ambulance, you would be a complete unknown, unless you carry a personal longitudinal health record. Do you?

Chip Kahn: [10:32] No, I don't.

Ed Cantwell: [10:33] No, you don't.

Chip Kahn: [inaudible 00:10:35].

Ed Cantwell: [10:36] Even though you're the CEO of the Federation of American Hospitals.

Chip Kahn: [10:38] I will try [crosstalk 00:10:40] that out, but I'm not confident I can.

Ed Cantwell: [10:41] So you're a complete unknown, and you come into the ER and you're an unknown. So we start the whole process of healthcare with the detriment where the most important part is unknown. So what will they do? They'll do a workup of you as if you're a brand new patient, even though it would be very helpful for them to know your history, what you're allergic to, your last set of x-rays or MRIs.

So you find yourself in that wonderful bed in that wonderful gown surrounded by a doctor and many nurses and techs. And you look at all the equipment that touch you, you know, heart monitor, infusion pump, pulse ox. And you make the assumption that all of those medical modalities are communicating in a way that's to the value of you and your caregiver. But the fact is, all of those medial modalities are not interoperable; they each use pervasively a set of proprietary interface and specifications so that their data remains their data. And then that data is then taken by what I call arms dealers and converts it into another proprietary format into the electronic medical record.

So you're surrounded by, in the case of our West Health Institute example, there were 13 modalities, there were 13 different screens. It was so dense you couldn't get to the bed. The alarms were blaring. And the data needed to save that man's life was completely missed, because all of the data in the siloed way goes into the EMR and they just could not orchestrate the data and take a dynamic response.

So now picture if you got on a 747 and the engines and the flight controls and the radar data were all siloed and proprietary, and you had to have the pilot of the stewardess or the flight attendant integrate all that data. That is interoperability in the episode of care. And it's easy to lay blame, but the

challenge is for the leadership of the healthcare market and the leadership of the vendors that provide all those wonderful devices to come together and just demand that that environment be as interoperable as every other aspect of your life.

So the Center's mission is to do the dirty work, and that is to define the interfaces and specifications that support the hospital having a platform where they can actually be the beneficiary of data liquidity. At this point in healthcare, given the high cost and high percentage GDP and the poor outcomes, about finishing what meaningful use was set to do. And in essence meaningful use simply digitized the record.

Chip Kahn: [14:19] So just to put an exclamation point on it, what you're saying is that it's not that the technologies can't speak to each other from a technological standpoint; it's that both the policies and the structure of our system are where the obstacle is coming from.

Ed Cantwell: [14:43] Yeah. That's a very good point. We use a four-corner chart in the Center, and the four corners are technical, clinical, ecosystem, and financial. This is not a technical issue. This is an architecture issue. It is a governance issue. It's a financial issue, where an industry comes together and has the resolve to make sure that interoperability is the baseline of their industry.

And there are so many good examples. So I use the example often of if I brought the top 10 hospital CEOs into the Center and put them in the boardroom, and I brought the 10 top vendor CEOs, and let's include Philips, Medtronic, Microsoft, even Apple and Google. The vendors on the other side of the table would not dare run their companies like hospitals are forced to run. And that's one of the key leadership challenges of any CEO today. So we really need to build an asset for the CEOs of the health systems, because the nation is relying on them, and we're handing our young people quite a challenge when 19% of GDP is spent on healthcare.

Chip Kahn: [16:20] So I'd like to ultimately get to a conclusion here as to what direction you think hospitals and CEOs should be going in, in terms of pressing policy and pressing their own operations. But to really lay a base for that, we have to step back and I need to get your views and your perspective on the public policy that in a sense has partly gotten us here.

One, and you mentioned meaningful use, which is the sort of standards that have to be met under something called the HITECH Act, which was passed back in 2009 by the Congress, that spent billions of dollars to provide the means for hospitals, physicians, to purchase electronic health records and then use them

with the idea being that was one of the needed activities to get us on that pathway to the free flow of information.

Then after billions, as I said, spent on installation, we still didn't have interoperability; we had actually all the issues you're talking about really still there. In the Cures Act in 2016, the Congress came back and said, well, we're not going to allow the blocking of information; electronic health information must flow freely. And that's where we are today with the attempt to implement that on top of the fact that most hospitals now do have electronic health records. Many if almost all physicians have some kind of electronic health records. So there are digits. But all the obstacles you describe still stand in the way of those digits flowing around.

Where do you think the current policy is pushing us? And will that be helpful to the endeavor and the goals that you're obviously talking about here, in terms of getting that information to the bedside for the patient, for me, who just got rolled into Centennial?

Ed Cantwell: [18:26] That's right. You're still in the ICU. Don't forget that.

Chip Kahn: [18:31] How could I? I can feel it right [crosstalk 00:18:34].

Ed Cantwell: [18:35] You're unconscious.

So a clear way to think about it is every industry other than healthcare has very successfully transitioned from analog to digital, right? And you know it in your life. Guys as old as we are remember before there was cable television, right? But they did it a different way. Instead of jumping to the end and declaring, I want a digital record of my cable purchase, they sat down and they built a digital industry. By making sure that the unit economic of their industry ... and I consider the individual to be the unit economic and I consider the first time the person enters with a caregiver or health system the start of the data.

So in every other industry, they made sure that that unit economic digitally was interoperable, that produced the level of data liquidity, and then they put the business governance on top of that. What meaningful use did was to make the leap that if we digitize the record the miracle will occur. They funded that to, what, $38 billion. They did not address interoperability; they did not address the challenge for hospitals that are negative to low margins to do the same thing as the other digital industries.

So it was bet on a miracle. And the miracle in this industry did not occur. So in a way, Chip, they're trying to go to the end, i.e., digital records, and force it

interoperability down, when you know every hospital struggles with CAPEX and OPEX. So whereas other industries proactively were able to architect this and agree upon the CEOs, the Center has to work with our board to in many respects try to untangle the spaghetti that's already there.

And that's why in the end, if you look at the 21st Century Cures, which really is challenging the free market to address this problem, and to do it in a way that's to the benefit of the person, even if that's at risk to financially holding a patient hostage to a health system.

So we've come to the conclusion that now is the time for the healthcare market, represented by for-profit, non-profit, federal, public, to have the same trust network and platform that every other vertical market has, where the unit economic is the person. And the ability to build data liquidity around the person for when they're in the hospital ... because the only thing that you're going to care about in that ICU, one, you're going to trust your nurse and hope that the nurse has the benefit of the information.

Let's take sepsis, right? Sepsis kills 278,000 people a year. $27 billion. And the onset of sepsis is the combination of four to six measures about you. If the data is not interoperable and liquid and able to be mined on a real-time basis, the only way they're going to find out about it is just to do a historical look. And that's why so many people die.

So the ability to put that trust network in place as the foundation of satisfying the 21st Century Cures, the CMS rules, the ONC rules, is paramount. You know, I'm a big analogy believer. It's like saying you will not use horses and buggies, you will use automobiles, but forgetting to build the highway.

Chip Kahn: [23:15] So we have requirements, though, that are going in place in the next many months, that say that we the hospitals have to figure out how to get to those highways. What's going to happen, at least in the short run?

Ed Cantwell: [23:36] Well, the challenge will be split into two parallel challenges. The first challenge, adhering to 21st Century Cures, is supporting the open API and API's application programming interface. And what that means is ... of course you're still in the ICU. They still don't know anything about you, because there's no trusted way of getting your information in at that time. But if you had an electronic medical record, you could authorize them to go into your record in DC and download it, exchange it with HCA, so that they have the benefit of at least that record. It's not longitudinal, it's not all of your record, but at least it's a partial look.

So the first thing that will happen, and this is happening, is hospitals are sharing the data through open API. You might have heard about the Apple health app. And the Apple health app simply is calling upon the 21st Century Cures open API and allowing me to put my Vanderbilt record on my Apple phone. That's good. What's disappointing is that's a one-way flow of information. I just happen to be the rat in my own experiment now, because Apple Watch diagnosed AFib. And sure enough I have AFib. But I can't get that data back into my electronic medical record, because there's no trusted way to do it. That's a good example of the shortfall of just a one-way flow of information.

The other issue that the Center is very vocal about is outside of healthcare, we're in a very tenuous time as it relates to privacy and security of the individual citizen. If you've not read the book The Age of Surveillance Capitalism, you should. Because it addresses the extent to which the largest five market cap companies, I won't name them, have mastered building a persona about you as a marketplace. And they will sell it pretty much to anyone who wants to buy it.

So we're concerned that if there's not a trust network that follows you once you're discharged from HCA and get your data and exposed it to the non-healthcare digital marketplace, that we could overshoot the objective and do as much harm as good.

So in the meantime, you've got the CEOs that are wrestling with margin and productivity and clinical outcomes. And in order to achieve the goals of 21st Century Cures, in order to adhere to the rules of CMS and ONC, each health system must have a trust network that is built on a digital platform of interoperability, data liquidity, and trust.

So I think the prediction or at least the approach of the Center is, maybe now's the time to come to some third alternative and have the healthcare vertical step up and suggest a digital trust network that every person could trust. And I mean, I mean really trust. Trust that they're going to afford you access to your data, help you engage the marketplace for products and services. I also think one of the most promising things for our healthcare vertical is for those companies to get in that business, like HCA and LifePoint and Vanderbilt, where data liquidity affords them a digital marketplace to grow and make margin so we can sustain our industry.

But, you know, the debate is, should that be government mandated? Probably not. It wasn't government mandated in any other industry. It was the result of the leaders of those industry. So I'm actually very encouraged that, if you look at this as a macro problem for the nation, what's unique about this point in our history, everybody has played their hand. The Apples, the Googles, the

Amazons, the IBMs, they want the data. And they want as little responsibility for that data as possible. You've got the government that spends a third or two-thirds of the spend; they just want lower prices and better outcomes. And then you're seeing the first signs of the privacy and security wave on behalf of the individual.

So the healthcare vertical now can decide, as a vertical, how are they going to go into the next 10, 20, 30 years. And it's nonsensical to think about trying to compete against a vertical market that wants to come disintermediate your market. We're sitting in Nashville, Tennessee, that used to be the home of music. That got digitally disintermediated by Apple to the point where music is a small part of our GDP. Healthcare's a large part.

So from an industry point of view, it's showtime, bottom line.

Chip Kahn: [30:09] So let's divide that up and going back to my unhappy example and sitting in an ICU in Centennial. Part of this is making sure that all the machines you described talk to each other and talk to my health record and are available to the nurse or the physician to see what's actually happening to me in real time. And then the other aspect gets into the trust network. But just in terms of that change, do you think we're on the cusp of it? Do we have the right strategy? And then I'll get to the larger issue of moving that information around outside that building in a moment.

Ed Cantwell: [30:51] That's an excellent question. Yes, we are on the cusp. And the overarching threat from the financial overhang of healthcare I think is really going to motivate the industry to act. So let's talk about step one. Our healthcare leaders sitting down with our medical device leaders, you know, the Medtronics, the Philips, the GEs, the Masimos, and saying, let's improve the episode of care by agreeing on this trust network. Where Philips can trust GE, and Medtronic can trust ACA. And do so in a way where it's a mutual governance, because I have great empathy for two medical device vendors that if there's not absolute trust of everything, there's zero trust. And that's the position.

So we're in the point ... the healthcare vertical is uniquely qualified and maybe solely qualified to solve that problem. As soon as that's done, then they're going to solve the problem around you, and make sure that you not only have an electronic medical record but you have a clinical decision support record that is that raw metadata at the point of care. And then when you're finally discharged and put on the Federation's private jet back to Washington, that-

Chip Kahn: [33:32] We should be so lucky.

Ed Cantwell:	[32:34]Called Southwest.
Chip Kahn:	[32:35]Right.
Ed Cantwell:	[32:36]That you have the ability of bringing that complete episode of care as a data set to your hospital in a way that didn't distract from HCA's business but empowered you as a person. And hopefully you would have the trust between the two.
	So it's really addressing the challenge and the desire to have longitudinal care. And the saying is, longitudinal care coordination without trust is a bit problematic. And without trust, it breaks down into wherever you go, that's going to be a silo and they're going to take the liability. So this chain of trust and the platform underneath it is the real challenge.
Chip Kahn:	[33:33] So I get the impression from you in terms of this second part of the stream of information that your view is that government edict only can get people's attention; at the end of the day, other physical things need to happen between the players, the depositories of the information. And can you illustrate that for me at all? How do you see that happening?
	I understand making sure that when I'm inside the hospital in terms of the intra-operability in a sense, that what you're doing here at the Center particularly and with the leadership in the hospital industry and the others we could get the focus done. The other, though, goes beyond that. This trust network that is more general, so that I can have the information back at my internist's office in Washington, not simply here sitting on the computer at Centennial.
Ed Cantwell:	[34:32] Yeah. So I'll use the finance industry as I think the gold standard, right? It would be the equivalent of saying if I went to Bank of America, while I was in the Bank of America I could get access to all my data, but when I left, I couldn't. So what they did was to create a co-op called SWIFT network many, many years ago. And the founders of that co-op put this platform in place. Then there's tens of thousands of people that use it. That's why you can write a check, that's why you can go to the ATM machine.
	And they were smart enough to know that they needed to follow the individual, or the citizen, wherever the citizen was. I think healthcare needs that same mentality. So that when you trust a health system, you're going to trust that they follow you ... they take care of you in the factory of healthcare, but they also follow you and afford you trust at home [inaudible 00:35:40] the social determinants of health. You cannot do that unless you have a data platform that has the individual as the unit economic and in a way that's trusted, secure, and

accurate. So, versus, I'm going to get you in my hospital and I'm going to protect that information so you can't go anywhere else.

So they have to make the leap of faith that interoperability is good for their industry, not a threat to their industry. And because all markets are digital, their competitor is the digital marketplace. So imagine if all metadata from all medical devices were piped to Amazon, Google, Apple, right? From a vertical market point of view, it's a threat to an industry trying to be a viable industry.

It would be the same level of attack if we went to Google and Amazon and Apple and said, we're going to just bust you guys up, right? And remove the competitive advantage you have in the market. And I'm not arguing for extreme one way or the other, but I am I guess really even ... I say often, Chip, that I am one-third an upset citizen; I'm one-third [inaudible 00:37:14], meaning it's time for the leaders to step up; and I'm one-third build a really strong technical lab. But it takes the combination of the three.

Chip Kahn:	[37:25] Let's look at one aspect of what you described in terms of the transfer of money and the moving around of information that allows me to go to any ATM, which is this organization or structure called SWIFT; it's both organization and structure.
Ed Cantwell:	[37:41]Yes.
Chip Kahn:	[37:42]And it takes some financing-
Ed Cantwell:	[37:43]And governance.
Chip Kahn:	[37:43]... and some governance and some oversight. Do you see us very close in healthcare to any kind of similar platform? And how do we get there?
Ed Cantwell:	[37:57] So we don't see any other effort towards that trajectory, and the way that we're trying to get there is why we formed the Center. And that is, at least get the CEOs in the room with enough market power that if a small handful of them embraced this, let's say the largest for-profit and the largest non-profit, then that would be a compelling percentage of healthcare spend to motivate the vendors to subscribe to that theory.
	And what that entails is, and this is a subtle but important point ... Let's take the highway system. If the highway system behaved like healthcare, every road would be a toll road. And that toll would change on a random basis, driven purely by the free market. So the resolve to make the flow of data a

commoditized platform utility is the condition precedent of any high-functioning digital marketplace.

It's hard, because you have to get the market forces together. Imagine if you didn't have this in cable, you didn't have it in finance, you didn't have it in shipping, you didn't have it in logistics. So the Center as a 501c centralized lab is intended to be the neutral technical force on behalf of the health system, the caregiver, and the person. We're not fighting for vendors; we're fighting for the individual and their unique relationship with their provider.

So it's a governance decision. And in the end, it will be a governance decision. There's nothing from the government side that prohibits it; in fact I think the government would welcome it. We know the health committee is extraordinarily supportive of a free-market solution.

So I think that we've done enough groundwork to have models other industries have provided. Now it's just the resolve of just navigating to a path to start it.

Chip Kahn: [40:29] Well, thanks. This has been very helpful. And I think it's given us some perspective both on where we are and where we need to go in terms of information flow. And as you point out, this is not some vague, abstract issue; this is information flow that will be impactful immediately and over time for patients. And from your example in your previous position, it's something that can make a difference in someone's life. And we've got to get it fixed, and hopefully we're on a [inaudible 00:41:06] way to do that.

So really appreciate the time you've spent with us, and look forward to the further work of the Center over time. Thanks, Ed.

Ed Cantwell: [41:14] Thank you.

Chip Kahn: [41:15] Thanks so much for listening. And be sure to subscribe to Hospitals in Focus on Apple Podcasts or Google Play, or visit our website, fah.org. It is so important that we get your feedback on our show. Please rate us and give us a review. And if you like what you hear, tell a friend.

Until next time, this is Chip Kahn with Hospitals in Focus.